

XI. *Descriptions of new species of the Syrphid genus Callicera* (Diptera). By the late G. H. VERRALL, F.E.S.
 Edited by J. E. COLLIN, F.Z.S., F.E.S.

[Read April 2nd, 1913.]

THE following descriptions of new species of *Callicera* (one Palaearctic, two from the Oriental Region, and one from Central America), together with a detailed description of the British *C. yerburyi*, Verr., and a re-description of *C. erratica*, Walk., were written by the late Mr. Verrall some years ago, but were kept in MS. until such time as he could complete an elaborate paper upon the whole genus. This unfortunately he had not finished at the time of his death, and a critical examination of the unfinished MS. showed that it was not in a state for publication without so much editing as would practically make it cease to be the late author's work, therefore it has been thought best to publish only the following descriptions.

J. E. C.

C. LOEWI, n. sp. ♂.

A rather small species, with no black hairs at tip of abdomen, second antennal joint half the length of first, third joint more than twice the length of first two together, thorax with 3-5 conspicuous black stripes, abdomen with nearly all the first two segments and a large triangle on third segment, black.

Face shining black with abundant golden pubescence, leaving bare a broad but not well-margined middle part which becomes narrow near the upper mouth edge. Frons all shining black extending down the sides to below antennae and across under antennae, side-margins of face below this with a tolerably broad line of grey dust extending nearly to lower angle of eye, frons and antennal prominence all absolutely bare. Jowls shining black and bare, lower half of back of head with dense yellow conspicuous pubescence, but upper part of back of head with a shining aeneous rim narrowed at vertex, and with more sparse dark brown pubescence, but all upper part with abundant tolerably long orange pubescence. Vertex with dense black pubescence almost lost amidst dense dark pubescence of eyes. Eyes viewed from above with all the middle, extending nearly to front, clothed with very dense brownish-black pubescence and the hind third apparently bare but really with long

rather dense sparse blackish pubescence above, greyish-white about middle and below; the eye-margin itself however bare, rather broadly so all about middle of eye. Antennae with the third joint hardly dilated, equal in width for two-thirds then slightly attenuated; style white, one-third the length of third joint, hardly blackened at base and moderately pointed.

Thorax and scutellum clothed all over with dense tawny pubescence which does not conceal the shining aeneous-black ground-colour, this pubescence is rather longer on fore part than on rest, and is still denser and more conspicuous at sides and on mesopleurae; middle of thorax in front with a conspicuous rather narrow dull black line fading away after reaching half-way down, well separated from this line are two broad dull black stripes each of which throws out at suture a dull black line which in its turn connects with an undefined black stripe along the sides of thorax, and this and the broad stripe converge and coalesce further down thorax and reach hind-margin rather narrowly near postalar calli.

Abdomen brighter aeneous but rather obscured by the very dense equal erect tawny pubescence, this is slightly but inconspicuously longer on the two basal segments, and distinctly longer about the sides near the base; first segment all dull black, second segment dull black with a large shining aeneous triangle at basal corners, a point of which nearly reaches the hind-corners of segment, third segment bright aeneous with a dull black dorsal triangle which begins at a point very near middle of base of segment and slopes out nearly to side corners leaving all actual hind-margin rather narrowly shining aeneous, fourth segment all shining aeneous only obscured by dense pubescence and without any trace of dull markings. Genitalia black but with only tawny pubescence. Belly shining aeneous with less dense tawny pubescence.

Legs black with the tip sixth or eighth of femora, all the tibiae absolutely, and basal joint of all tarsi except at the tip, clear orange; pubescence behind anterior femora and in front of hind femora rather long, dense, and conspicuous, all tawny; pubescence on tibiae longer and denser than usual and all tawny, but that on four last joints of tarsi black except on the soles of second and third joints; tarsi, especially front ones, dilated; claws black but obscurely orange about base, pulvilli blackish orange.

Wings rather smoky with a brownish orange tinge on fore part which is hardly defined except on the long stigma; cross-vein at two-fifths the discal cell; upper marginal cross-vein with a rather sharp angle. Squamae glassy orange with orange fringes. Halteres orange.

Length $12\frac{1}{2}$ mm. Antennae about 4 mm.

Described from a male in the British Museum taken by Miss D. M. A. Bate at Troodos (about 4,500 feet) in Cyprus, some time between July and October 1902.

C. YERBURYI, Verrall, Ent. Month. Mag., xl, 229 (1904). ♀.

Aeneous black, brightly shining but rather obscured on the thorax and base of abdomen by abundant reddish-orange pubescence. Second antennal joint less than half the length of first. Thorax not striped. Abdomen black haired at the tip and with dark transverse bands on the first and second segments. Femora almost entirely yellow.

Head black, moderately shining; frons below the ocelli with abundant pubescence, which ranges from being brownish-orange with a band of black hairs crossing the ocelli and pointing more forwards to being blackish on the upper and middle part or even all dark blackish brown or mainly black, behind this, dense longer orange pubescence extends sideways a little beyond the upper angle of the eye; space across the antennal knob shining black from eye to eye and almost bare; face with rather abundant shorter slightly drooping pale greyish-yellow or orange pubescence which leaves a middle line all the way down shining black and bare; space between the eyes at the vertex more than one-third the width of the head, and slightly widening all down to the mouth; before the jowls there is a shining black rather wide bare space; jowls with reddish-orange pubescence, which becomes denser though shorter on the lower part of the back of the head, and then decreases rapidly in length until it dies out before the middle of the back of the head; all about the flat of the back of the head the pubescence is very short and insignificant, brownish-orange until it meets the longer orange occipital pubescence; all the upper part of the back of the head brightly shining aeneous black, but the lower third slightly dusted whitish; close against the eyes on almost all the upper two-thirds it is polished and impunctate; proboscis large and black with small black palpi. Eyes with dense pubescence on almost all the fore part conspicuous and mainly dark brown, but becoming greyer and less dense below, while on all the back half of the eye it is very short inconspicuous and very sparse, and all the middle part of the back of the disc of the eye is bare. Antennae distinctly longer than the head is from the back of the vertex to the tip of the antennal knob; antennal knob polished black and quite bare; second antennal joint less than half the length of the first, and the third about two and a half times as long as the two basal ones together; third joint for about two-fifths of its length forming the deepest part of the antennae, but thence gently shelving off for a short distance

after which the rest of the joint remains equal in depth; style yellow with the basal quarter blackish, pointed at the tip; the basal joint of the antennae is slightly shining, but the third joint is dull blackish and quite bare, while the two basal joints are rough with tiny bristles.

Thorax shining aeneous black with no trace of grey or black stripes, and with the mesopleurae and the scutellum entirely and almost equally covered with rather long dense but not crowded reddish-orange pubescence, but this pubescence does not much obscure the ground-colour on the whole disc of the thorax and on the scutellum; on the mesopleurae the pubescence is more dense and tangled and more reddish, on the back-margin of the thorax it is slightly longer, and on the scutellum it is longer and less reddish.

Abdomen with the basal segment hardly visible, but the second segment dull black on the middle quarter of the base, extending into a wide dull black cross-band a little before the hind-margin which is fairly broad at its middle but becomes narrower towards, and does not reach by a fair distance, the sides; third segment with a dull black band, narrowly interrupted at its middle, occupying about one-sixth the segment and nearly reaching the sides. Pubescence about the base and sides similar to that on the thorax, but longer about the basal corners and shorter at the sides of the third and part of the fourth segments, shorter and more brownish-orange on the disc of the third segment, and extending slightly (ranging from an eighth to more than half) on to the disc of the fourth segment, or *vice versa*, the pubescence on the rest of the fourth segment including all the tip black and slightly longer, extending slightly on to the hind part of the disc of the third segment. Belly shining aeneous black on the disc but with wide lateral margins up to the dorsal plates; second segment with rather abundant and rather long orange pubescence; third segment with shorter similar pubescence; fourth segment with much shorter dull brownish pubescence about its base but all black on the rest; fifth segment (concealed under the fourth dorsal segment) triangular and shining black with entirely black pubescence.

Legs reddish-orange; coxae and trochanters black and moderately shining, and the last two joints of the tarsi black; femora more reddish, hind pair slightly obscured above near the base or, in one specimen, all the femora blackish at the base and the posterior pairs even to the basal third; hind tibiae sometimes with a blackish speck outside just before the middle, and always with a kink inside at about three-quarters of their length. Pubescence on the front femora beneath towards behind dense, equal, and all orange; on the middle femora shorter, especially on the tip half, slighiter, and

rather less dense; on the hind femora mainly on the front part, but some beneath near the base, and there are some black hairs beneath about the tip; the tiny pubescence on the tibiae and tarsi is all orange, even on the black joints of the tarsi, but the soles of the anterior tarsi bear several short black bristles and there are a few on the soles of the hind tarsi, after the basal joint and the base of the second joint; claws black at the tip; pulvilli dull glassy yellowish.

Wings with an orange tinge on the base and the fore part, and the stigma orange though blackish at its extreme base; veins on the basal half orange, and the costal vein orange almost to the tip of the subcostal vein, other veins blackish; cubital vein slightly arched; upper marginal cross-vein never far from the wing-margin, but about twice as far at its slight bend as at its top or bottom, and ending in the cubital vein at an acute angle near the wing-tip; discal cross-vein placed before the basal third of the discal cell and moderately sloping. Squamae dark glassy yellow, with a yellow or orange margin, the alar pair with a short dense matted yellow or orange fringe, the thoracal pair with a long orange or dark orange fringe and with some rather long orange pubescence on the outer part of the disc. Halteres small, brownish-orange.

Length without antennae about 12 mm. Antennae 3 mm.

Four female specimens of this beautiful fly were taken by Col. J. H. Yerbury near Nethy Bridge in Inverness, from August 8th to 21st 1904.* Altogether he saw about ten specimens, but found them very difficult to follow with the eye when they were on the wing; he saw the first specimen on August 3rd, but only as a strange reddish insect paying fleeting visits to the pine-stumps; this insect, however, attracted him so much that he made special search for it, and on August 8th after a long day's work he was returning home, and while hesitating about taking shelter from a shower under a big pine-tree he became aware that an *Eristalis*-like fly was flying up and down the trunk; after one abortive attempt at capturing it, the fly returned and was boxed while sitting on the trunk; on August 16th he missed two specimens which appeared to be yellower in colour and which might have been males, but he took another female. He mentions in a letter to me an interesting chain, "hunting for the headquarters of *Laphria flava* showed me where *Xylota florum* occurred in numbers.

* At the same locality, on August 9th, 1911. Col. Yerbury took two more females.—J. E. C.

hunting for *X. florum* showed me where *Callicera* paid fleeting visits, hunting for *Callicera* showed me where *Palloptera usta* occurred in some numbers, while catching *P. usta* put me on the track of a *Drosophila* which sat on the stumps and flicked its wings about almost exactly like *Palloptera*."

I have had much pleasure in naming this fine species after Col. Yerbury, especially as the species of this genus and of the allied genus *Ceria* have been very extensively used for association with their original captors or with well-known Dipterologists.

C. DOLESCHALLI, n. sp. ♂.

♂. Head wider than thorax and seen in profile nearly two-thirds as long as deep; face shining black slightly obscured with brownish-grey dust and with rather abundant pale brownish-grey pubescence, hanging down or sloping rather inwards, leaving bare a broad shining black middle line all down the face; eye-margins broadly dusted brownish-grey, seen from above there is a line of dark pubescence running down the sides of face from the base of antennae parallel with eye-margin; frontal prominence broad and rounded all polished black; upper part of face under antennae bulging; a rather broad black space across front part of jowls from eyes to mouth, jowls with long brownish-grey pale pubescence like that on face; lower half of back of head a little inflated and all the same brownish-grey colour as facial eye-margins but with only short brownish-yellow pubescence, upper half blackish, reduced in width and hollowed out towards vertex, with a brownish post-ocular ciliation on upper part ending in much longer hairs on vertex. Eyes with dense brown pubescence longest on front part of eye, shorter, rather sparser and paler below and behind, but no dark band visible. Antennae with the basal joint long, rather ferruginous, second joint dark-brown about two-thirds the length of first, third joint dark-brown and nearly so long as the first two together, about as thick as end of second joint for half its length then gradually tapering to a moderate point, arista not quite so long as the third antennal joint, blackish and moderately thick on basal quarter then not conspicuously white but slightly brownish-white and ending in a very sharp point, the basal antennal joint with unusually conspicuous bristly pubescence on end three-quarters above, and on end half beneath, second joint with very minute, hardly noticeable pubescence.

Thorax dark aeneous, appearing darker behind because of black pubescence, on the disc may be traced with difficulty a broad middle

blacker stripe and apparently four more broad lines the two outer ones on each side connected in front just about the suture. Pubescence fairly dense but not very long except at sides and nearly erect on the disc, brownish-grey on all fore part but black on all hind part becoming long and rather conspicuous on and about postalar calli. Scutellum moderately bright aeneous, large, rather inflated and semi-circular, pubescence round margin forming a long conspicuous whitish fringe but on disc not quite so long and tinged with brown.

Abdomen much spoilt by damp, pubescence on two basal segments long, pale-brownish on first segment (almost whitish at sides, similar to that round margin of scutellum, but rusty on disc), black and conspicuous on all second segment (but rusty on disc), erect abundant and whitish-yellow on third and fourth segments. I think the first segment is deep black and that there is on the second segment well after the aeneous base a broad transverse deep black band which is extended down the middle to the hind-margin. Belly aeneous with rather abundant brownish-orange pubescence.

Legs orange-red with nearly the basal half of femora indeterminate black, tarsi blackish after most of basal joint, the last three joints of tarsi appear to be a little dilated. Femora all with abundant greyish-white pubescence but front pair with a few inconspicuous black hairs behind above. Front tibiae behind on more than tip half with a conspicuous whitish fringe which occurs (though much less conspicuous) on middle tibiae, hind tibiae also with some inconspicuous short whitish pubescence about the middle.

Wings rather tinged with brownish about the base and especially about the middle and on the stigma, discal cross-vein before one-quarter the length of discal cell, upper marginal cross-vein with a rounded angle. Alar squamae blackish-brown with fringes of the same colour, thoracal squamae more orange-brown with large conspicuous fringes of the same colour. Halteres orange.

Length about 12 mm. without antennae, which measures 2.75 mm.

Described from a male in the British Museum taken by Lieut. E. Y. Watson in the N. Chin Hills (5,000 feet) in March 1893.

C. ERRATICA, Walker, List Dipt. Brit. Mus., iii. 543 (1849). ♀.

Second antennal joint on the outer side slightly more, but on the inner side distinctly less, than half the length of first; first joint obscurely tawny, paler at the base than at the tip, bearing scattered, all short, black bristles on the end two-thirds, second and third

joints dull black the former densely clothed with short bristles, first joint and basal third of third joint dusted with red pollen, third joint a little dilated for basal two-fifths then gradually tapering to a blunt end. Style missing in the specimen examined. Face nearly all covered with orange pubescence hardly obscuring the ground-colour and leaving bare only a narrow shining black middle line; the black line against jowls narrow; jowls and lower half of back of head with long orange pubescence, which becomes shorter and browner on the upper part of back of head but is longer, bent forward and orange on the vertex as far forward as the top ocelli, in front of which the frontal pubescence is dense, soft and rather upturned and when viewed from in front is very inconspicuous, frons moderately shining blue-black but slightly obscured by dust, lower half of sides of frons with an eye-stripe of whitish-grey dust continued (but yellower in colour) all down sides of face. Eyes when viewed from in front with a narrow conspicuous black band of pubescence running down just in front of the middle, and with long rather dense whitish pubescence before and behind it; this pale pubescence extends all over the rest of eye leaving only just the middle of back part bare, and is most dense against the black band. The facial pubescence creeps up the sides of the frontal prominence leaving only just the prominence bare, and there is no sign of a black band of pubescence across frons.

Thorax dull black (apparently having been cleaned), but probably of an aeneous colour in life because the sides are aeneous black, scutellum moderately shining black with a tinge of aeneous. Pubescence equal, all tawny. It is impossible to tell whether stripes are present or not.

Abdomen moderately shining black tinged with aeneous; basal segment and a semi-circular depression at the middle of the base of second segment, dull black; across the middle of second and third segments (just after middle of second and probably interrupted on third segment) there may be indications of a very narrow dull black band. Pubescence all tawny and short except about basal corners of second segment.

Legs red-tawny, coxae black but even tips of tarsi only a little obscured, pubescence abundant on femora, moderate but noticeable behind anterior tibiae, and all orange.

Wings with brownish-orange infuscation about the veins on the front part even to tip of wing, also along discal vein to almost end of discal cell; discal cross-vein at two-fifths the discal cell; upper marginal cross-vein with a slight angle. Squamae glassy whitish-yellow, with long yellow fringes. Halteres brownish-orange.

Length 11 mm. without antennae, which measures 4 mm.

This description was made from the original type specimen of *Chrysotoxum erraticum* in the British Museum.

C. SACKENI. n. sp. ♂.

♂. Head dilated and nearly two-thirds as long as broad, pubescence of face greyish-orange and hardly leaving a bare middle line but bare only just about middle of facial knob, a good deal of yellow dust along upper sides of face, pubescence similar to the facial is present all round under eyes and up lower part of back of head which is very little inflated; jowls aeneous. Eyes densely clothed with pubescence and I think I can trace a dark line of pubescence down eyes in the usual place. Frons shining black, almost or quite bare. Antennae without style not so long as head, both the basal segments short and third segment quite three times as long as the other two together, considerably dilated on the basal half and ferruginous beneath at the base, but tapering on the end half; style long, white and thin, but blackish and thickened at base, about half as long as the third joint.

Thorax with brownish-orange dense pubescence, but more than hind half of disc with mainly black pubescence intermixed, and scutellum on disc with practically all rather conspicuous black pubescence, though beneath and round margin the pubescence is longer and all brownish-orange. Pleurae with brownish-orange pubescence.

Abdomen bright aeneous though I can trace nearly all the second segment dull black and a broad dull black band right across the disc of third segment, it is on this latter segment that the bright aeneous colour is most conspicuous on the fore- and hind-margins, broader at the sides than at middle; the fourth segment appears coppery aeneous. Pubescence equal and dense of a more ruddy hue than on thorax with no trace of black hairs at tip. Belly with dense brownish-orange pubescence. Genitalia black.

Legs rufous orange, femora black except on the tip quarter when they become indeterminately rufous orange, tarsi rather darkened above on the last two or three joints. Pubescence behind anterior, and in front of hind femora, dense, not very long, brownish-orange; hind tibiae rather darkened above for a considerable space after the middle; coxae, trochanters, and base of femora conspicuously black haired, especially the coxae and trochanters.

Wings rather brownish about base and fore part just past discal cross-vein and more so about costa to end of long subcostal vein, discal cross-vein at two-fifths of discal cell, upper marginal cross-vein a little angulated. Squamae dark brownish glassy, fringes of thorax

cal squamae long brownish-orange. Halteres with small blackish-brown knobs.

Length without antennae 13 mm. Antennae 3.5 mm.

Described from one male in the British Museum from Burma (Fort White, N. Chin Hills, 7,000 feet, April 1893), collected by Lient. E. Y. Watson.

C. POULTONI, n. sp. ♀.

♀. Face with dense golden pile leaving middle line bare, frons (? partly rubbed) with a patch of golden pile on each side a little above antennae then about middle with a cross-band of longer erect black hairs, and a few black hairs about ocellar space and some long ones at back of vertex; all back of head from jowls to vertex with dense golden pile but there is a rather wide bare shining black space between jowls and face. Eyes with fairly abundant pubescence, brown on upper part but pale on lower part, and there is apparently a broad dark brown band of pubescence running down the eye from about a quarter from top to about middle, after which the same band seems to be composed of whitish pubescence behind and brown in front (the whitish predominating)—the top and back part of the eye may be bare (perhaps rubbed). Antennae with the second joint half the length of first, but both short, and the third joint more than three times as long as the first two together, very moderately dilated for about half its length then gradually diminishing but altogether rather slender, style long about one-third the length of third joint, basal joint black then orange, style long pure white and rather thick from dense white pubescence; base of antennae and top of antennal prominence brownish.

Thorax apparently dull slaty black (much rubbed and apparently having been wetted) with three conspicuous rather narrow black lines down the disc well apart, and of these the two side ones widen a little above the suture, while none extend more than half-way between suture and hind-margin. Scutellum similar in colour to thorax, but I can see traces of bright aeneous round margin (which tends to confirm my suspicions of discoloration), the pubescence as left is mainly a dense golden one round margin. All about disc of thorax, especially behind the humeri and possibly on disc of scutellum are a few scattered, erect, thin, blackish hairs, which may well exist though inconspicuous amidst a dense golden pile and might remain even when that pile had been rubbed off, but in this specimen the dense golden pubescence remains only on sides after base of wings and along hind-margin.

Abdomen dull black (possibly having been wetted) with traces of

shining on the front quarter of the second segment and narrowly along the hind-margin, while the third segment at the middle has a pair of brilliant aeneous, narrow, transverse bands well separated in the middle, widening upwards at sides towards basal corners and quite reaching the side-margins, the side-margins below them and the hind-margin narrowly are also rather bright aeneous; the fourth segment has a pair of similar transverse bands slightly sloping upwards and nearly meeting at the middle. Pubescence (as left in specimen examined) forming a dense bright golden band on hind-margin of the second, third and fourth segments, but there are indications of golden pubescence all over the abdomen but no sign of any apical black hairs. Belly with rather universal golden pubescence (long on hind half of second and third segments), which tends to prove that upper side should be all covered.

Legs, after the black coxae and trochanters, all fulvous except at tips of tarsi, pubescence as far as traceable all clear orange, no pubescence noticeable on front tibiae or any long pubescence visible behind anterior or in front of hind femora (probably, however, rubbed off).

Wings with a strong fulvous tinge mainly caused by the orange-red anterior veins, but still the anterior part is all so tinged and it only gradually dies away towards tip and hind-margin; discal cross-vein at two-fifths discal cell, upper marginal cross-vein with a very slight angle, in fact only slightly rounded. Squamae pale yellow with long red-orange fringes. Halteres apparently with a brownish knob and pale stem.

Length without antennae 12 mm. Antennae 4 mm.

Described from a single specimen in the Hope Department of the University Museum of Oxford with a label "Mexico," a small square coloured label [74] and a diamond

shaped label 